

July 2017

# Annual report

R. P. Speer  
*Iowa State College*

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# ANNUAL REPORT.

## STATE AGRICULTURAL COLLEGE,

AMES, IOWA, JANUARY 1, 1890.

*To His Excellency, William Larrabee:*

I have the honor to submit herewith the second annual report (January 1, to December 31, 1889,) of the Iowa Agricultural Experiment Station, as required by law.

R. P. SPEER,  
*Director.*

The following is a concise report of the work performed at the Iowa Agricultural Experiment Station during the year 1889.

Feeding experiments were planned and managed from December 26, 1888, to April 11, 1889, by the Iowa Agricultural Experiment Station and the Farm Department of the College. The number of steers used in the experiment was twelve. The objects aimed at were: First, to compare the feeding value, in fattening, of timothy hay, corn fodder, corn ensilage and sorghum ensilage, when each is the sole coarse food of the ration, and corn and cob meal the only grain.

*Second.* To compare a single coarse food, e. g. timothy hay, corn fodder, or ensilage, with a mixture of the two, e. g. corn fodder and timothy, ensilage and timothy,—the grain being in all cases the same, viz. corn and cob meal.

*Third.* To compare corn and cob meal with whole corn, as the grain feed in fattening.

*Fourth.* To compare the cost of out-door with in-door winter fattening.

*Fifth.* To compare any and all of the rations named above, with a more varied ration containing wheat-bran as a part of the grain feed.

For plan, details and results of these experiments see Bulletin 5.

The number of varieties of each of the different kinds of the cereals, peas, grasses, etc. which were sowed on the Experiment Station grounds in March 1889, were as follows,.

viz: Wheat 7, oats 15, rye 2, barley 3, field peas 3, tame grasses 6, wild grasses 33, and prickly comfrey and other forage plants 7.

During the latter part of April, and the first part of May, we planted also 62 varieties of potatoes, 30 varieties of corn, 10 kinds of sorghum, 3 kinds of buckwheat and a large assortment of the most promising kinds of garden vegetables.

For methods of culture and the results of the experiments with the different plants named above, see Bulletins 6 and 7.

In January and February, 1889, many hundreds of sections of the wood of hardy and tender fruit trees and shrubs were examined under the microscope by Dr. B. D. Halstead for the purpose of determining whether there were any structural differences between hardy and tender trees or not. For results see Bulletin 4.

In February and March, 1889, many experiments were made in the Experiment Station propagating houses with ripe and green cuttings of fruit-trees and plants.

In August, a sugar house was erected on the Station grounds and the necessary machinery was procured for making sugar from sorghum by the Jennings's diffusion process. The results of the sugar experiments in September, were reported in Bulletin 7.

The Station Chemist has made many analyses of milk, butter, grasses and other forage plants, ensilage feed stuffs and soils, besides inventing a simple, accurate and rapid process for determining the butter fat in milk.

The twigs of many kinds of tender and hardy fruit-trees were analyzed and compared for the purpose of determining whether there were differences in their composition or not. See Bulletin 4.

Several hundred stalks of Amber cane were analyzed last September, which were produced from seeds of stalks which were unusually rich in crystallizable sugar.

The Entomologist during the past year has given special attention to the following subjects:

*First.* Parasites on domestic animals.

*Second.* Remedies for Codling Moths.

*Third.* Habits of Plum Gouger and Plum Curculio and the best remedies.

*Fourth.* Food habits of the Striped Squirrel.

*Fifth.* Comparative effects of the arsenites, Paris green, London purple and white arsenic on different kinds of foliage, when applied in different mixtures and different strengths.

*Sixth.* Habits and life-histories of the cut-worms of the state in all of their stages of development, and the parasites and artificial remedies useful for their destruction.

Much attention has also been given in a general way to isolated experiments upon many common injurious insects, and valuable results have been obtained which will be reported in the bulletins from time to time.

Due attention has also been given to collecting, mounting, and determining specimens for the Station Collection.

## FINANCIAL STATEMENT.

### *THE IOWA AGRICULTURAL COLLEGE EXPERIMENT STATION*

#### IN ACCOUNT WITH THE

### UNITED STATES APPROPRIATION.

#### RECEIPTS.

1888-9.

Amount received from United States Treasurer, as per appropriation for the year ending June 30, 1889, under Act of Congress approved March 2, 1887.....	\$15000 00
Amount received from the sale of stock and produce belonging to the Station.....	285 02
Total receipts.....	\$15285 02

#### EXPENDITURES.

1888-9.

Paid for Buildings—		
On the improvement of the station building .....	\$	750 00
Paid for Salaries—		
Director .....	\$2200 00	
Director's Assistant ( $\frac{3}{4}$ of year)....	537 77	
Chemist .....	2000 00	
Botanist. ( $\frac{3}{4}$ of year).....	1575 00	
Entomologist.....	1600 00	
Treasurer .....	250 00	8162 77
Paid for Labor—		
General field and office work.....	\$1223 92	
Tiling and ditching land.....	48 37	
Grubbing timber land .....	60 00	1332 29

**Paid for Apparatus and Library—**

Office fixtures.....	\$ 17 90	
Books and periodicals.....	632 15	
Apparatus for laboratories.....	440 52	
Hot water heater for office and laboratories.....	923 67	2014 24

**Paid for Equipments—**

Machinery.....	\$ 60 80	
Tools.....	32 13	92 93

**Paid for Supplies and Expenses—**

Traveling expenses of director.....	\$ 70 77	
Traveling expenses of director's assistant.....	229 06	
Traveling expenses of botanist.....	44 92	
Mileage and per diem of committee.....	306 85	
Feed and care of horses and mules..	241 14	
Seeds, trees, etc.....	128 62	
Supplies for laboratories.....	70 21	
Supplies for field experiments and propagating house.....	176 48	
Supplies for office.....	82 08	
Coal and gasoline.....	77 17	
Rent of land.....	200 00	
Fixing heater and water supply.....	74 91	
Telegrams.....	50	
Express and freight.....	221 33	1924 04

**Paid for Bulletins—**

Printing of same.....	1008 75	
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\$15285 02	\$15285 02
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I hereby certify that the foregoing statement is a true copy from the books of account of the Iowa State Agricultural College.

HERMAN KNAPP, Treasurer.

We, the undersigned, Auditing Committee for the Board of Trustees, certify that the above is a correct statement of moneys received, labor performed, purchases made and necessary expenses incurred for the Iowa Agricultural College Experiment Station for the year ending June 30, 1889.

W. I. CHAMBERLAIN,  
E. W. STANTON,  
Auditing Committee.

I hereby certify that Herman Knapp is the Treasurer of the Iowa State Agricultural College, and that the above is his signature.

W. I. CHAMBERLAIN,  
President of the Iowa State Agricultural College.